

## CREATING A COMPUTER SHOW

The following materials are needed for you to create a dramatic computer show.

### To create Pictures:

PAINT software (also, PAINT data diskette for saving pictures).  
General Utility Diskette: PAINT.CPY, PAINT

### To create Music:

Music Composer (or diskette with music data files).  
General Utility Diskette: MUSIC, AUTORUN.SYS (from MUSIC PLAYER)

### To create Animation:

PLAYER MAKER  
General Utility Diskette: ANIMATE

### Other:

SCREEN MAKER

Personal Data Diskette -- This is your own diskette which will be used to accumulate all the necessary data and programs.

## CREATING A COMPUTER SHOW

The following instructions provide a good starting point for you to learn to create a computer show. Many of the options available to you can be explored later, after you have had a chance to get acquainted with the more straightforward procedure below.

1. The first step is to create some figures or objects that you will later move around (animate) on top of a painting. Insert a BASIC cartridge and load the PLAYER MAKER program. Once the program is loaded, remove the diskette and insert your own Personal Diskette into the disk drive in order to save the objects you created using PLAYER MAKER. Refer to the PLAYER MAKER documentation pages 1 through 6 only. When you finish designing your players, (1) type "F", (2) move the cursor to SAVE PLAYERS AND END PROGRAM, (3) press the joystick button, (4) type "S" to save a subroutine, and (5) provide the filename PLAYER.
2. Now you must copy some files from the GENERAL UTILITY DISKETTE to your own Personal Diskette. Insert the GENERAL UTILITY DISKETTE into the disk drive and type the following:

```
DOS      (RETURN)
Press the letter "O" and (RETURN)
WINTER.PIC      (RETURN)
(RETURN)
```

Now insert your own Personal Diskette into the drive and press (RETURN).  
Then switch diskettes again so that the GENERAL UTILITY DISKETTE is in the disk drive.

```
Press the letter "O" and (RETURN)
Type: FUGUE.MUS      (RETURN)
(RETURN)
```

Insert your Personal Diskette and press (RETURN).  
Switch back to the GENERAL UTILITY DISKETTE.

```
Press the letter "O" and (RETURN)
Type: AUTORUN.SYS    (RETURN)
(RETURN)
```

Insert your Personal Diskette and press (RETURN).  
Switch back to the GENERAL UTILITY DISKETTE.  
Press the letter "B" and (RETURN) to get back to BASIC.

3. Now you must enter some programs into computer memory. Type the following (with the GENERAL UTILITY DISKETTE in the disk drive and "READY" on your screen):

```
NEW
ENTER "D:ANIMATE"      (RETURN - wait for disk drive to stop)
ENTER "D:PAINT"        (RETURN - wait for disk drive to stop)
ENTER "D:MUSIC"        (RETURN - wait for disk drive to stop)
```

Now insert your own Personal Diskette into the disk drive and type the following:

```
ENTER "D:PLAYER"      (RETURN - wait for disk drive to stop)
20 FILE$="WINTER.PIC":GOSUB PAINT      (RETURN)
40 GOSUB TEACH          (RETURN)
50 END                  (RETURN)
SAVE "D:SHOW"          (RETURN)
```

4. Now you are ready to teach animation to the players you created. See the "Animation Subroutine Documentation" and when ready, type: RUN. When you finish teaching your players, go on to step 5.

5. Now you can complete your entire computer show. Do the following:

```
Press (SYSTEM RESET).
LOAD "D:SHOW"          (RETURN)
10 FILE$="FUGUE.MUS":GOSUB MUSIC      (RETURN)
30 GOSUB PLAY          (RETURN)
40 GOSUB ANIMATE        (RETURN)
SAVE "D:SHOW"          (RETURN)
```

6. To see your completed show, first turn the computer off and then turn it back on. Then type:

```
RUN "D:SHOW"          (RETURN)
```

#### FOR THE MORE EXPERIENCED

1. Create one or more paintings using the PAINT software. Save your paintings to files on a PAINT Data Diskette -- you will probably find such a diskette in the vicinity of the PAINT program.
2. Load and run the program called PAINT.CPY from the General Utility Diskette. This will copy the paintings you created from the PAINT Data Diskette to your own Personal Diskette.
3. Use the PLAYER MAKER program to create figures that you will later move about on your pictures. Save the "player subroutines" you create to your Personal Diskette. Use the filename PLAYER.
4. If you are a little more experienced, and you want to have text on your screen combined with your paintings, then use SCREEN MAKER to design a screen layout. Use GRAPHICS 7 as the background mode and then put text modes (GRAPHICS 0, 1, or 2) where you want them. Be sure you leave at least one scan line of GRAPHICS 7 at the very top of your screen. Save your screen subroutine to your Personal Diskette in a file called SCREEN.
5. Use the MUSIC COMPOSER cartridge to create the music you would like in your show and save this on your Personal Diskette. Or, if you like, copy music routines using DOS from the General Utility Diskette to your Personal Diskette.

Your Personal Diskette should now include the following files:

```
PAINT data files:    filename.PIC
Player subroutine:   PLAYER
Screen subroutine:   SCREEN.SRC
Music data:          filename.MUS
```

Use DOS (by inserting the General Utility Diskette into disk drive 1 and typing DOS) to copy the AUTORUN.SYS file to your Personal Diskette.

Now insert the General Utility Diskette into your drive and type the following:

```
NEW
ENTER    "D:PAINT"
ENTER    "D:ANIMATE:
ENTER    "D:MUSIC:
```

Insert your Personal Diskette into the disk drive and type the following:

```
ENTER    "D:PLAYER"
ENTER    "D:SCREEN.SRC" (if you used SCREEN MAKER)

SAVE     "D:SHOW"
```

The next step is to teach your players their animation sequence. When teaching the players, do not use music -- only put up your background painting by typing the following:

```
10 FILE$="filename.PIC":GOSUB PAINT
20 PATH=1:GOSUB TEACH
```

And, if you have more than one animation sequence...

```
30 FILE$="filename.PIC":GOSUB PAINT (if you have another painting)
40 PATH=2:GOSUB TEACH
```

When you have finished teaching your players, type the following:

LOAD "D:SHOW"

10 FILE\$="filename.MUS":GOSUB MUSIC

(This loads your music data. Any time you want to load a different tune, use this same statement with a different filename.)

20 WINDOW=2:GOSUB MYSCREEN

30 PRINT #6; "..."

(Use this only if you used SCREEN MAKER.)

40 FILE\$="filename.PIC":GOSUB PAINT

(This loads your painting. Any time you want to load a different picture, use this same statement with a different filename.)

50 GOSUB PLAY

(This starts your tune from the beginning. GOSUB HALT will stop it and GOSUB RESUME will restart it from where it stopped.)

60 PATH=1:GOSUB ANIMATE

70 ...

(You can continue with different pictures, different names, and different animation sequences by repeating the same processes as used above.)

When you have finished your program, be sure to save it by typing:

SAVE "D:SHOW"

Before your program can play music, you must turn your computer off and then back on so that the AUTORUN.SYS file gets loaded into memory. Then type: RUN "D:SHOW".

## Animation Subroutine Documentation

### INTRODUCTION

#### OVERVIEW

ANIMATE is a BASIC subroutine that allows you to teach objects called players to move about on the screen so as to create interesting animation sequences without writing any program code. Players can be taught the paths they are to follow (using a joystick) and you can vary their speeds as they follow along their paths. Once a player is taught how it is to move, it will permanently remember what it was shown enabling you to replay the animation at any later time.

#### REQUIRED ACCESSORIES

- ATARI BASIC Language Cartridge
- 48K RAM
- ATARI 810 Disk Drive
- One ATARI Joystick Controller
- PLAYER MAKER Program

## USING ANIMATE

There are three distinct steps involved in using ANIMATE. All three stages are contained in the one program:

1. TEACH      The TEACH stage allows you to show each player the path it is to follow in the final animation. You use a joystick to individually show each player the path it is to follow.
2. PRACTICE      The PRACTICE stage is automatically called after the TEACH stage, but you can call PRACTICE without using TEACH to make changes to previously taught players. PRACTICE sets all the players that were taught into motion along their paths. You can freeze the animation to independently change each player's speed. You can even stop a player, or turn it off to make it temporarily invisible.
3. ANIMATE      Your final product will only use this stage which replays the animation you created. All of the information needed to create the animation is called into memory from a diskette where it was stored during the teaching process.



## GETTING STARTED

Use the PLAYER MAKER program to create figures that you will later move about using the ANIMATE program. You can create anywhere from 1 to 4 figures and then save the subroutine generated by PLAYER MAKER to your own Personal Diskette. Save your subroutine in a file called PLAYER.

If you are going to want to have your players move around on an interesting background, then use the PAINT program to draw your background and save your painting on the PAINT data diskette. then use the PAINT.CPY program on the General Utility Diskette to copy the painting to your own Personal Diskette.

The next step is to merge the programs you will need to create your animation.

Insert the General Utility Diskette into your drive and type the following:

```
NEW
ENTER "D:PAINT"
ENTER "D:ANIMATE"
```

Insert your Personal Diskette into the disk drive and type the following:

```
ENTER "D:PLAYER"
```

The final step is to type a few BASIC statements (use line numbers 10, 20, etc.). You probably will first want your picture to be put on the screen so type:

```
10 FILE$="filename.PIC":GOSUB PAINT
    (This will load your painting stored in the file called
    "filename".)
```

Then you will want to teach your players their first animation sequence. Type:

```
20 PATH=1:GOSUB TEACH
```

If you have another sequence of animation that you want to teach your players then you will want the following:

```
30 PATH=2:GOSUB TEACH
```

You may want a different picture on the background for your second animation. If so, you should have another statement similar to statement 10 before line number 30. You can continue in this fashion for as much as you like.

Finally, type: RUN

WARNING: You may be intending to create an entire computer show including music and maybe even mixed screens of text and graphics (see "Creating a Computer Show"). Don't add any other features to your program until after you have taught your players their animation sequences.

## USING TEACH

You will teach each player that you created with PLAYER MAKER the path that it is to follow. Later you will show the players their timing. It makes no difference at this point what order you teach your players or how "fast" you teach them. For each animation sequence you can choose to teach only some or all of your players.

You can teach a player only part of its path, go on to teach another player all or some of its path, and then return to continue teaching the previous player. This makes it easier for you to position players in the appropriate places on the screen so that players can interact with each other.

To change the player that you are teaching, press the space bar. When you finish teaching all the players, type "F".

All of your players are originally located just to the left of the screen. If you move a player with the joystick while holding the joystick button down, the player will move, but it will not remember its movement as part of its path. So, for example, if you want a player to start its animation in the middle of the screen, hold the joystick button down while you move the player to its starting location and then release the button.

If you now move the player without holding down the button, the player will remember the path you make it follow. If you want the player to disappear and reappear somewhere else in your final animation sequence, then hold the button down at the position you want the player to disappear, move the player somewhere else, and then release the button. Be sure you at least nudge the player a little bit at its new position if you don't plan on continuing to move it from that position.

If you end your teaching sequence with your player on the screen, then when you run your animation the player will remain on the screen at the end. If you want it off the screen, then be sure either you create a path that leads it off the screen or, while holding the button down, move it off the screen, release the button, and move it a little. This will cause it to disappear from the screen when you run your animation.

## USING PRACTICE

You will automatically go into PRACTICE mode immediately after you teach players their paths. If you wish to change the timing of previously taught players then you can use the following statement in a program (you can set PATH= any number.)

```
20  PATH=1:GOSUB PRACTICE
```

(This lets you change the timing of your first animation sequence using the paths previously taught to the players.)

Use the space bar on PRACTICE mode to temporarily freeze (and then restart) your animation sequence. Once you freeze the animation, you can make changes to the speed settings of your players. When you actually run the finished animation, the players will change speeds at the appropriate points without "freezing."

To change a player's setting, move the cursor over the player number using the joystick. Then press the joystick button to change the setting. You can change any or all of the settings at any one freeze point.

If you set a players speed to zero, it will remain stationary until you increase its speed. Five is the fastest setting you can give a player (not very fast, unfortunately). If you set a player to "off", it will disappear until you change its setting.

The PRACTICE session will continue until all players that were taught in the TEACH mode have reached the end of their predefined paths. You will then be asked if you want the animation sequence to repeat itself. If you answer yes, then when you run your animation, this particular sequence will restart at its beginning when the players finish their paths and will continually repeat itself. This means that if your program intended to do something else after this animation sequence, it will never get to it.

## FINISHING UP

Be careful that you remove all of the statement that were either GOSUB TEACH or GOSUB PRACTICE statements from your program once you have finished teaching your players. These statements should all be replaced with GOSUB ANIMATE where appropriate. Also, set PATH=number to tell the computer which animation sequence it should run if you defined more than one sequence.

## TECHNICAL NOTES

A number of files are created by this animation program: These files include:

Pxy.DAT where x is the player number (0-4) and y is the path number. This file contains a sequence of bytes -- each pair of bytes representing a horizontal and vertical position of the player. The sequence defines the player's path.

Rmy.CTL where y is the path number. This file contains the speed data for the animation sequence. The data is a sequence of bytes -- every four bytes representing the speeds of the four players. Each byte can be a 0 through 5 representing speeds of 0 through 5 or a 6 representing a player turned off. The last four bytes in this area of the file are either 7000 or 8000 which tells the computer to either repeat the animation sequence or end it.

After this speed data is a sequence of bytes representing the number of moves each player should make before any of their speeds change. Thus if these numbers are 5, 18, and 24 this would mean that after 5 moves the players will change speed and again after 18 moves and again after 24 moves.